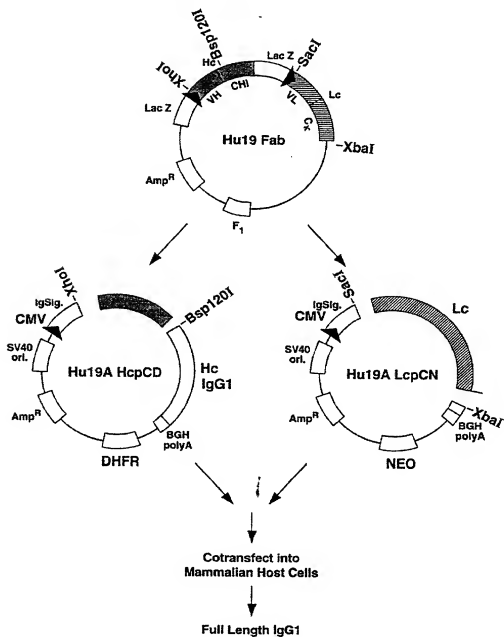


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FIGURE 1

Conversion of Hu19 Fab to a Complete IgG1 mAb



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Figure 2

Comparison of the Heavy Chain Amino Acid Sequences of various Hu19 mAbs

**

GL Dp58:	EVQL VESGGGLVQPGGSLRLSCAASGFTFS	30
19A:	MGWSCIILFLVATATGVHS---LE-----R-----T-L-	
19B:	-EFGLSWV---LLR--QCQVQL V-----	
19C:	-----	
19D:	-----	
	CDR1	CDR2
	-----	-----
GL Dp58	SYEMNWVRQAPGKGLEWVS YI SSSGST II Y A DSVKG R FTISRDN A KNSLY	80
19A	G-T-H -----S-TGGSNF- <u>N-S</u> -----	
19B	-----	
19C:	-----A-----	
19D:	-----Q-S-----	
	CDR3	

GL: Dp58	LQMNSLRAEDTAVYYCAR 9^h	(SEQ ID NO: 4)
19A:	-----T----- TAP L A PP Y DEWGQGT L VT V SS	(SEQ ID NO: 5)
19B:	-----	(SEQ ID NO: 6)
19C:	-----	(SEQ ID NO: 7)
19D:	-----	(SEQ ID NO: 8)

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Figure 3

Comparison of the Light Chain Amino Acid Sequences of various Hu19 mAbs

A. Leader and Variable

		CDR1	

GL Dpk9:	DIQMTQSPSSLSASVGRVTITTCRASQSTIS	30	
19A:	MGWSCIILFLVATATGVHS EL-----T--V-	28	
19B,C,D:	MRVPAQLLGLLLWLGRGARDIQM-----		
		CDR2	

GL Dpk9:	SYLNWVYQQKPGKAPKPLLIYAASSLQSGVPSRFSGSGSGTDFTLTITSSLP	80	
19A:	NFLN-----E--T--D--TS-----M--S-----	78	
19B,C,D:	-----		
		CDR3	

GL Dpk9:	EDFATYYC *	(SEQ ID NO: 9)	
19A:	--L-M---QASINTEPLFGGGTRIDMRR 105	(SEQ ID NO: 10)	
19B,C,D:	-----	(SEQ ID NO: 11)	

B. Constant Region (Ck)

Hu-k,19C,D:	TVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYFPREAKVQWKVDNALQSGN	
19A,B:	-----	
Hu-k,19C,D	SQESVTEQDSKSDSTYLSSTLTLSKADYKHKVYACEVTHQGLSSPVTKS	
19A,B:	-----L-----	
Hu-k,19C,D	FNRGEC (SEQ ID NO: 12)	
19A,B	----- (SEQ ID NO: 13)	

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Figure 4

Figure 4A-- DNA sequence of the plasmid Hu19AHcpd

1 gacgtcggcgccgctctagggcctccaaaaagcctcctcactacttctgg 50
51 aatagctcagaggccgaggcgccctcggcctctgcataaataaaaaaat 100
101 tagtcagccatgcattggggcggagaatggcggaactggcgaggtagg 150
151 ggcgggatggcgaggtagggcgggactatggttgctgactaattgag 200
201 atgcatgctttgcatacttctgctgctggggagcctggggactttccac 250
251 acctgggtgctgactaattgagatgcattgcttgcatacttctgctgct 300
301 ggggagcctggggactttccacacccctaactgacacacattccacagaat 350
351 taattcccgggatcgatccgtcgactacgactagttattaatagtaat 400
401 caattacggggtcattagttcatagcccatatatggagttccgcgttaca 450
451 taacttacggtaaatggccgcctggctgacgcgccaacgacccccgcc 500
501 attgacgtcaataatgacgtatgttcccatagtaacgccaatagggactt 550
551 tccattgacgtcaatgggtggactatttacggtaaaactgcccaattggca 600
601 gtacatcaagtgtatcatatgccaaagtacggccctattgacgtcaatga 650
651 cggtaaatggccgcctggcattatgccagttacatgaccttatgggact 700
701 ttctacttggcagttacatctacgtatttagtcatcgctattaccatgggtg 750
751 atgcgggttttggcagttacatcaatggcggtggatagcggttttgactcacg 800

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801 ggggatttccaagtctccaccccatgacgtcaatgggagttgtttttgce 850
851 accaaaatcaacgggacttttccaaaatgtcgtacaactccgccccattg 900
901 acgcaaatgggcggtaggcgtgtacggtgggaggtctatataagcagagc 950
Eco RI
951 tgggtacgtgaacgctcagatcgccctggagacgccatcgaattctgagca 1000
1001 cacaggacctcaccatgggatggagctgtatcatcctcttcttggtagca 1050
M G W S C I I L F L V A
Leader start
1051 acagctacaggtgtccactccgaggtccaactgctcgaggagctctggggg 1100
T A T G V H S E V Q L L E V - (SEQ ID NO: 15)
Processed N-term.
1101 aggcctggtcaggcctggcgggtccctaagactctcgtgtgcagcctctg 1150
1151 gaaccaccctcagtggtctataccatgcactgggtccgccaggctccaggg 1200
1201 aaggggctggagtggtgtctcattactggaggtagcaacttcataaa 1250
1251 ctactcagactcagtggaagggccgattcaccatctccagagacaacgcca 1300
1301 agaactcactttatctgcaaatgaacagcctgacagccgaggacacggct 1350
1351 gtctattattgtgcgacgcgccctatagcaccgccctactttgaacctg 1400
1401 gggcaggggaaccctggtcaccgtctcctcagcctccaccaagggcccat 1450
1451 cgggtcttccccctggcacccctcctccaagagcacctctgggggcacagcg 1500

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1501 gccctgggctgectgggtcaaggactacttccccgaaccggtagccgtgtc 1550
1551 gtggaactcaggcgccctgaccagcggcgtgcacaccttccggctgtcc 1600
1601 tacagtctctcaggactctactccctcagcagcgtggtgactgtgccctcc 1650
1651 agcagcttgggcaccccagacctacatctgcaacgtgaatcacaaagcccag 1700
1701 caacaccaagtggtgacaagaaagttgacccaaatctctgtgacaaaactc 1750
1751 acacatgcccaccgtgccccagcacctgaactcctggggggacccgtcagtc 1800
1801 ttctcttccccccaaaacccaaggacacctctatgatctcccgacccc 1850
1851 tgaggtcacatgcgtggtggtggacgtgagccacgaagacctgaggtca 1900
1901 agttcaactggtacgtggacggcgtggaggtgcataatgccaaagacaaag 1950
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2101 gggcagcccccgagaaccacaggtgtacacctgcccccatccgggatga 2150
2151 gctgaccaagaaccagggtcagcctgacctgectgggtcaaggcttctatc 2200
2201 ccagcgacatcgccgtggagtgggagagcaatgggcagccggagaacaac 2250
2251 tacaagaccacgcctcccgtgctggactccgacggctccttcttctctta 2300
2301 cagcaagctcaccgtggacaagagcaggtggcagcaggggaacgtcttct 2350

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2351 catgctccgtgatgcatgaggtctgcacaaccactacacgcagaagagc 2400

2401 ctctccctgtctccgggtaaatgatagatatctacgtatgatcagcctcg 2450
S P G K * end of heavy chain (SEQ ID NO: 16)

2451 actgtgccttctagtgtccagccatctgtgtttgccctcccccggtgcc 2500

2501 ttcttgaccctggaaggtgccactcccactgtcctttcctaataaaatg 2550

2551 agggaaattgcattgcattgtctgagtaggtcattctattctggggggt 2600

2601 ggggtggggcaggacagcaagggggaggattgggaagacaatagcaggca 2650

2651 tgctggggatgctgggtgggtctctatggaaccagctggggctgcacagcgt 2700

2701 ggatctccgatcccagcttctctctcaatttcttatttgcataatga 2750

2751 gaaaaaaaggaaaaattaattttaacaccaattcagtagttgattgagcaa 2800

2801 atgcgttgccaaaaaggatgctttagagacagtggtctctgcacagataa 2850

2851 ggacaaaacattattcagagggagtaccagagctgagactcctaagccag 2900

2901 tgagtggcacagcattctagggagaaaatatgcttgatcacccaagcct 2950

2951 gattccgtagagccacaccttggtgaagggccaatctgctcacacaggata 3000

3001 gagagggcaggagccagggcagagcatataaggtgaggtaggatcagttg 3050

3051 ctctcacatttgctcttgacatagttgtgttgggagcttgatagcttg 3100

3101 gacagctcagggtgcgatttcgcgcaaaacttgacggcaatcctagcgt 3150

3151 gaaggctggtaggattttatccccgctgccatcatggttcgaccattgaa 3200

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3201 ctgcatcgtcgcggtgtcccaaatatggggattggcaagaacggagacc 3250
3251 taccctggcctccgctcagggaacgagttcaagtacttccaaagaatgacc 3300
3301 acaacctcttcagtggaaggtaaacagaatctgggtattatgggtaggaa 3350
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3451 cttgccaaaagtttgggatgatgccttaagacttattgaacaacggaaat 3500
3501 ggcaagtaaaagtagacatgggtttggatagtcgggagcagttctgtttacc 3550
3551 aggaagccatgaatcaaccaggccaccttagactcttctgtacaaggatc 3600
3601 atgcaggaatttgaagtgacacgtttttccagaaattgatttggggaa 3650
3651 atataaacttctccagaatacccaggcgtctctctgagggtccaggagg 3700
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3751 gaagatgctttcaagttctctgctccctectaaagctatgcatttttat 3800
3801 aagaccatgggacttttctgctgcttttagatcagcctcgactgtgccttct 3850
3851 agttgccagccatctgtgttttggccctccccgctgcttcttgacct 3900
3901 ggaaggtgccactcccactgtcctttcctaataaaatgaggaaattgcat 3950
3951 cgatttgtctgagtaggtgtcattctattctggggggtggggtggggcag 4000
4001 gacagcaagggggaggattgggaagacaatagcaggcatgctggggatgc 4050

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4051 ggtgggctctatggaaccagctggggctcgatcgagtgatgactgcggc 4100
4101 cgcgatcccgctcgagagcttggcgtaatcattggtcatagctgtttcctgt 4150
4151 gtgaaattgttatccgctcacaattccacacaacatacagagccggaagca 4200
4201 taaagtgtaaagcctgggggtcctaatactgagtgagctaaactcacattaatt 4250
4251 gcgttgcgctcactgccccgtttccagtcgggaaacctgtcgtgccagct 4300
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4751 cagttcgggtgtaggtcgttcgctccaagctgggctgtgtgcacgaacccc 4800
4801 ccgttcagcccgaccgctgcgccttatccggtaactatcgtcttgagtc 4850
4851 aaccgggtaagacacgacttatcgccactggcagcagccactggtaacag 4900

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4901 gatttagcagagcgaggtatgtaggcggtgctacagagttcttgaagtggc 4950
4951 ggcctaactacggctacactagaaggacagattttggtatctgcgctctg 5000
5001 ctgaagccagttaccttcggaaaaagagttggtagctcttgatccggcaa 5050
5051 acaaacaccgctggtagcggtgggtttttgtttgcaagcagcagatta 5100
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5551 ggggaagctagagtaagtagttcgccagttaatagtttgcgcaacgttggt 5600
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5701 tgtgcaaaaaagcggttagctccttcgggtcctccgatcgttgtcagaagt 5750

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5751 aagttggccgcagtggttatcactcatggttatggcagcactgcataattc 5800
5801 tcttactgtcatgccatccgtaagatgcttttctgtgactggtgagtact 5850
5851 caaccaagtcattctgagaatagtgatgcggcgaccgagttgctcttgc 5900
5901 ccggcgtaataacgggataataccgcgccacatagcagaactttaaaagt 5950
5951 gctcatcattggaaaacgttcttcggggcgaaaactctcaaggatcttac 6000
6001 cgctgttgagatccagttcgatgtaaccactcgtgcaccaactgatct 6050
6051 tcagcatcttttactttaccagcgtttctgggtgagcaaaacaggaag 6100
6101 gcaaaatgccgcaaaaagggaataaggcgacacgggaaatgtgaatac 6150
6151 tcatactcttcttttcaatattattgaagcatttatcagggttattgt 6200
6201 ctcatgagcggatacatatttgaatgtatttagaaaaataaacaataagg 6250
6251 ggttccgcgcacatttccccgaaaagtgccacct 6284 (SEQ ID NO:14)

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Figure 4B-- DNA sequence of the plasmid Hu19ALcpn:

1 gacgtcgccgcccgtctaggcctccaaaaagcctcctcactacttctgg 50

51 aatagctcagagggccgagggcgccctcgccctctgcataataaaaaaat 100

101 tagtcagccatgcatggggcggagaatgggcggaactgggcggagtagg 150

151 ggcgggatgggcggagttagggcgggactatggttgctgactaattgag 200

201 atgcatgctttgcatacttctgcctgctggggagcctggggactttccac 250

251 acctggttgctgactaattgagatgcatgctttgcatacttctgcctgct 300

301 ggggagcctggggactttccacacctaaactgacacacattccacagaat 350

351 taattccggggatcgatcgtcgactgactagtattataatagtaat 400

401 caattacggggtcattagttcatagcccatatattggagttccgcgttaca 450

451 taacttacggtaaatggccgcctggctgaccccaacgaccccgccc 500

501 attgacgtcaataatgacgtatgttcccatagtaacccaatagggaactt 550

551 tccattgacgtcaatgggtggactatttacggtaaacgcccacttgcca 600

601 gtacatcaagtgtatcatatgccaagtacgccccctattgacgtcaatga 650

651 cggtaaatggccgcctggcattatgccagtagatgaccttatgggact 700

701 ttcctacttggcagtagatctacgtattagtcacgctattaccatgggtg 750

751 atgcggttttggcagtagatcaatgggcgtggatagcggttgactcag 800

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801 gggatttccaagtctccaccccatgacgtcaatgggagttgttttggc 850
851 accaaaaatcaacgggactttccaaaatgtcgtacaactccgccccattg 900
901 acgcaaatgggcggtaggcgtgtacggtgggaggtctatataagcagagc 950

Eco RI
951 tgggtacgtgaaccgtcagatcgccctggagacgccatcgaattctgagca 1000

1001 cacaggacctcaccatgggatggagctgtatcatcctctcttggtagca 1050
M G W S C I I L F L V A
Leader start

1051 acagctacaggtgtccactccgagctcaccagctctccatcctccctgtc 1100
T A T G V H S E L T Q S P - (SEQ ID NO: 18)
Processed N-term.

1101 tgcattctgtaggagacagagtcaccatcacttgccgggcaactcagagtg 1150
1151 ttagtaactttttaattggtatcagcagaagccagggaagccctacg 1200
1201 ctctgatctatgatgcatccacttcgcaaagtgggtccccatcaaggtt 1250
1251 cagtggcagtggtatctgggatgatttcagttctcaccatcagcagttctgc 1300
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1351 cttttcggcggagggaaccagaatagatatgagacgaactgtggctgcacc 1400
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1451 cctctgttgtgtgctgtgaataacttctatcccagagaggccaaaagta 1500
1501 cagtgggaaggtggataacgccctccaatcgggtaactcccaggagagtggt 1550

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1551 cacagagcaggacagcaaggacagcacctacagcctcagcagcacctcga 1600

1601 cgctgagcaaaagcagactacgagaaacacaaagtctacgctcggaagtc 1650

1651 acccatcagggcctgagcttgcccgctcacaaagagcttcaacaggggaga 1700

L P V T K S F N R G E

Xba I

1701 gtgttagtgagatgatacctctagagtcatactacgtatgatcagcctcgac 1750

C * end of light chain (SEQ ID NO: 19)

1751 tgtgccttctagttgcccagccatctgtttgtttgccccctccccgtgcctt 1800

1801 ccttgaccccggaaggtgccactcccactgtcctttcctaataaaatgag 1850

1851 gaaattgcatcgcatattgtctgagtagtgctattctattctgggggtgg 1900

1901 ggtggggcaggacagcaagggggaggattgggaagacaatagcaggcatg 1950

1951 ctggggatcggtgggctctatggaacagctggggctcgacagctcgag 2000

2001 ctagecttgcttctcaatttcttatttgcataatgagaaaaaaggaaaa 2050

2051 ttaattttaacaccaattcagtagttgattgagcaaatgcgttgccaaaa 2100

2101 aggatgctttagagacagtgttctctgcacagataaggacaaacattatt 2150

2151 cagaggagtagccagagctgagactcctaagccagttagtggcacagca 2200

2201 ttctaggagagaaatatgctgtcatcaccgaagcctgattccgtagagcc 2250

2251 acaccttggtaaaggccaatctgctcaccacaggatagagagggcaggagc 2300

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2301	cagggcagagcatataaggtgaggtaggatcagttgctcctcacatttgc	2350
2351	ttctgacatagttgtgttgggagcttggatcgatccaccatggtgaaca	2400
2401	agatggattgcacgcaggttctccggccgcttgggtggagaggctattcg	2450
2451	gctatgactgggcacacagacaatcggtgctctgatgccgccgtttc	2500
2501	cggctgtcagcgcagggcgcccggttctttttgtcaagaccgacctgc	2550
2551	cggcgccctgaatgaactgcaggacgagcgcggctatcgtggctgg	2600
2601	ccacgacggcggttctcttgccgagctgtgctcgacgttgtcactgaagcg	2650
2651	ggaagggactggctgctattgggcgaagtgcggggcaggatctctgtc	2700
2701	atctcaccttgctctctgcgagaaagtatccatcatggctgatgcaatgc	2750
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3001	tggattcatcgactgtggccggctgggtgtggtggcgaccgctatcaggaca	3050
3051	tagcgttggctaccctgatattgctgaagagcttggcggcgaaatgggct	3100

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3101 gaccgcttcctcgtgctttacgggtatcgccgctcccgattcgcagcgcat 3150
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3201 cgaaatgaccgaccaagcagcgcccaacctgccatcacgagatttcgatt 3250
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3451 ggtttgtccaaactcatcaatgtatcttatcatgtctggatcgcgggcgc 3500
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3951 cctgacgagcatcacaaaaatcgacgctcaagtcagaggtggcgaaaccc 4000
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4101 ccttcgggaagcgtggcgctttctcaatgctcacgctgtaggtatctcag 4150
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4201 ttcagcccgaccgctgcgccttatccggttaactatcgtcttgagtcacac 4250
4251 ccggtaaagacacgacttatcgccactggcagcagccactgggtaacaggat 4300
4301 tagcagagcgaggtatgtaggcgggtctacagagttcttgaagtgggtgc 4350
4351 ctaactacggctacactagaaggacagtatttggtatctgcgctctgctg 4400
4401 aagccagttaccttcggaaaaagagttggtagctcttgatccggcaaaaca 4450
4451 aaccaccgctggtagcgggtgttttttggtttgcagcagcagattacgc 4500
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4601 atcaaaaaggatcttcacctagatccttttaaatataaaatgaagtttta 4650
4651 aatcaatctaaagtatatatgagtaaacttggctgcaggttaccatgc 4700
4701 ttaatcagtgaggcacctatctcagcgatctgtctatttcgttcatccat 4750
4751 agttgctgactcccccgctgtgtagataactacgatacgggagggttac 4800

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4801 catctggccccagtgctgcaatgataccgagagacccacgctcaccggct 4850
4851 ccagatttatcagcaataaacacgcccagccggaagggccgagcgcagaag 4900
4901 tggctctgcaactttatccgctccatccagtcctatttattgttgcggg 4950
4951 aagctagagtaagtagttcgccagttaatagtttcgcaacgcttgtgtcc 5000
5001 attgctacaggcatcgtggtgtcacgctcgtcgtttggatggcttcatt 5050
5051 cagctccggttcccaacgatcaaggcgagttacatgatccccatgttgt 5100
5101 gcaaaaaagcgggttagctccttcggctcctccgatcgttgtcagaagtaag 5150
5151 ttggccgcagtggttatcactcatggttatggcagcactgcataattctct 5200
5201 tactgtcatgccatccgtaagatgcttttctgtgactggtgagtactcaa 5250
5251 ccaagtcatcttgagaatagtggtatgcggcgaccgagttgctcttgcccg 5300
5301 gcgtcaatacgggataataccgcgcacatagcagaactttaaaagtgt 5350
5351 catcattggaaaacgttcttcggggcgaaaactctcaaggatcttaccgc 5400
5401 tgttgagatccagttcgatgtaacccactcgtgcacccaactgatcttca 5450
5451 gcactcttttactttcaccacgctttctgggtgagcaaaaacaggaaggca 5500
5501 aaatgccgcaaaaaagggaataaggcgacacggaatgttgaatactca 5550
5551 tactcttctcttttcaatattattgaagcatttatcagggttattgtctc 5600
5601 atgagcggatacatatttgaatgtatttagaaaaataacaaataggggt 5650
5651 tcgcgcacatttccccgaaaagtgccacct 5681 (SEQ ID NO: 17)

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Figure 4C Heavy chain coding sequence in the plasmid Hu19BHcpd

Eco RI
gaattcgggtacc 1000

1001 atggagtttgggctgagctgggttttctcgtggctcttttaagaggtgt 1050
M E F G L S W V F L V A L L R G V
Leader start

1051 ccagtgtcagggtgcagctgggtggagtctgggggaggcctggtcaggcctg 1100
Q C Q V Q L V - (SEQ ID NO: 21)
Processed N-term

1101 gcgggtccctaagactctcgtgtgcagcctctgggaaccacctcagtggc 1150

1151 tataccatgcactgggtccgccaggctccagggaaggggctggagtggggt 1200

1201 ctcatccattactggaggtagcaacttcataaactactcagactcagtga 1250

1251 agggccgattccaccatctccagagacaacgcgaagaactcactttatctg 1300

1301 caaatgaacagcctgacagccgaggacacggctgtctattattgtgcgac 1350

1351 cgccccatagcaccgcctactttgaccactggggccagggaaccctgg 1400

1401 tcaccgtctctcagcctccaccaaggcccatcggtcttccccctggca 1450

1451 cctcctccaagagcacctctgggggacacagcggcctgggctgctgggt 1500

1501 caaggactacttccccgaaccgggtgaccgtgtcgtggaaactcaggcgccc 1550

1551 tgaccagcggcgtgcacaccttcccggtgtcctacagtcctcaggactc 1600

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1601 tactccctcagcagcgtggtgacggtgccctccagcagcttggggaccca 1650
1651 gacctacatctgcaacgtgaatcacaagcccagcaacaccaaggtggaca 1700
1701 agaaagttgagcccaaatcttctgacaaaactcacacatgcccacggtgc 1750
1751 ccagcacctgaactcctggggggacggtcagttctctcttccccccaaa 1800
1801 acccaaggacacctcatgatctccggacccttgaggtcacatgctggtg 1850
1851 tgggtggacgtgagccacgaagacctgaggtcaagttcaactggtacgtg 1900
1901 gacggcgtggaggtgcataatgccaaagacaaagccgaggagcagta 1950
1951 caacagcacgtaccgggtggtcagcgtcctcaccgtcctgcaccaggact 2000
2001 ggctgaatggcaaggagtacaagtgcagggtctccaacaaagccctccca 2050
2051 gccccatcgagaaaaccatctccaaagccaaagggcagccccgagaacc 2100
2101 acaggtgtacacctgcgcccatccccgggatgagctgaccaagaaccagg 2150
2151 tcagcctgacctgcctgggtcaagggtctctatccagcgacatcgccgtg 2200
2201 gagtgggagagcaatggggcagccggagagaacaactacaagaccacgcctcc 2250
2251 cgtgctggactccgacggctcctctctctctctacagcaagctcaccgtgg 2300
2301 acaagagcaggtggcagcaggggaacgtctctctcatgctccgtgatcat 2350
2351 gaggtctctgcacaaccactacacgcagaagagcctctcctgtctccggg 2400
S P G
2401 taaatgatagatatc - (SEQ ID NO:20)
K * end of heavy chain

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Figure 4D Light chain coding sequence in the plasmid Hu19BLcpcn

Eco RI
gaattccatgga 1000

1001 catgagggtccccgctcagctcctagggtcctgctgctctggtccgag 1050
M R V P A Q L L G L L L L W L R
Leader start

1051 gtgccagatgtgacatccagatgaccagttccatcctccctgtctgca 1100
G A R C D I Q M T - (SEQ ID NO: 23)
Processed N-term

1101 tctgtaggagacagagtcaccatcacttgccgggcaactcagagtgtag 1150

1151 taactttttaaatgggtatcagcagaagccaggggaagccctacgctcc 1200

1201 tgatctatgatgcaccacttcgcaaagtggggtcccatcaaggttcagt 1250

1251 ggcagtggaatctgggatggatttcagttcaccatcagcagttctgcagcc 1300

1301 tgaagatcttgcaatgtattactgtcaagcgagtatcaataccccgcttt 1350

1351 tcggcggaggaggaccagaatagatgatgagacgaactgtggctgcaccatct 1400

1401 gtcttcattctcccgccatctgatgagcagttgaaatctggaactgcctc 1450

1451 tgttggtgctgctgtaataacttctatccagagaggccaaagtacagt 1500

1501 ggaaggtggataacgccctccaatcggttaactccaggagagtgtcaca 1550

1551 gagcaggacagcaaggacagcacctacagcctcagcagcacctcgacgt 1600

1601 gagcaaaagcagactacgagaacacaaaagtctacgctcggaagtcaccc 1650

10065851-2148301

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Figure 4E Heavy chain coding sequence in the plasmid Hu19CHcpd

Eco RI
gaattcggtaacc 1000

1001 **atggagtttgggctgagctgggttttctcctcgtggctcttttaagaggtgt** 1050
M E F G L S W V F L V A L L R G V

1051 **ccagtgtcagggtgcagctgggtggagctctggggaggcctggtcaggcctg** 1100
Q C Q V Q L V - (SEQ ID NO: 21)
Processed N-term

1101 **gcgggtccctaagactctcgtgtgcagcctctggaaccaccctcagtggc** 1150

1151 **tataccatgcactgggtccgccaggctccagggaaggggctggagtggggt** 1200

1201 **ctcatccattactggaggtagcaacttcataaactacgcagactcagtga** 1250
S N F I N Y A - (SEQ ID NO: 26)

1251 **agggccgattccaccatctccagagacaacgcgaagaactcactttatctg** 1300

1301 **caaatgaacagcctgacagccgaggacacggctgtctattattgtgcgac** 1350

1351 **cgccccatagcaccgcccctactttgaccactggggccagggaaccctgg** 1400

1401 **tcaccgtctcttcagcctccaccaagggcccatcggtcttccccctggca** 1450

1451 **ccctcctccaagagcacctctctgggggcacagcgccctgggctgcctgggt** 1500

1501 **caaggactacttccccgaaccgggtgacctgtcgtggaactcaggcgccc** 1550

1551 **tgaccagcggcgtgcacaccttcccggtgtcctacagtcctcaggagtc** 1600

1601 **tactccctcagcagcgtggtgacctgtccctccagcagcttgggcaccca** 1650

1000
 1050
 1100
 1150
 1200
 1250
 1300
 1350
 1400
 1450
 1500
 1550
 1600
 1650

1000000000

S P G

K * end of heavy chain

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Figure 4F Heavy chain coding sequence in the plasmid Hu19DHcpd

Eco RI
gaattcgggtacc 1000

1001 atggagtttgggctgagctgggttttctcgtggtctttttaagaggtgt 1050
M E F G L S W V F L V A L L R G V

1051 ccagtgtcagggtgcagctgggtggagtctgggggaggcctggtcaggcctg 1100
Q C Q V Q L V - (SEQ ID NO: 21)
Processed N-term

1101 gcgggtccctaagactctcgtgtgcagcctctggaaccaccctcagtggc 1150

1151 tataccatgcactgggtccgccaaggctccagggaaggggctggagtgggt 1200

1201 ctcatccattactggaggtagcaacttcatacaatctactcagactcagtga 1250
S N F I Q Y S - (SEQ ID NO: 28)

1251 agggccgattcaccatctccagagacaacgccaaagaactcactttatctg 1300

1301 caaatgaacagcctgacagccgaggacacggctgtctattattgtgcgac 1350

1351 cgcccctatagcacccgacctattttgaccactggggccagggaaccttg 1400

1401 tcaccgtctcctcagcctccaccaagggcccatcgggtcttccccctggca 1450

1451 cccctctccaagagcacctctctgggggcacagcggccctgggtgctggt 1500

1501 caaggactacttccccgaaccgggtgacctgtctggaactcaggcgccc 1550

1551 tgaccagcggcgtgcacaccttccgggtgtcctacagtctcctcaggactc 1600

1601 tactccctcagcagcgtgggtgacctgcccctccagcagcttgggaacca 1650

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1651 gacctacatctgcaacgtgaatcacaaagccagcaacaccaaggtggaca 1700

1701 agaaagttgagcccaaatcttctgtgacaaaactcacacatgccaccgtgc 1750

1751 ccagcacctgaactcctggggggaccgtcagtccttctctccccccaaa 1800

1801 acccaaggacaccctcatgatctccggaccctcgaggtcacatgogtgy 1850

1851 tgggtggacgtgagccacgaagacctgaggtcaagttcaactggtaagtg 1900

1901 gacggcggtggaggtgcataatgccaaagacaaagccgaggagagcagta 1950

1951 caacagcacgtaccgggtggtcagcgtcctcaccgtcctgcaccaggact 2000

2001 ggctgaatggcaaggagtagaagtgcaaggtctccaacaaagccctccca 2050

2051 gcccccatcgagaaaaccatctccaaagccaaagggcagccccgagaacc 2100

2101 acaggtgtacacctgcccccatccgggatgagctgaccaagaaccagg 2150

2151 tcagcctgacctgacctgggtcaaaggtcttatccagcgacatcgccgtg 2200

2201 gagtgggagagcaatgggcagccggagaaacaactacaagaccacgectcc 2250

2251 cgtgctggactccgacggtccttcttctctacagcaagctcaccgtgg 2300

2301 acaagagcaggtggcagcaggggaacgtcttctcatgctccgtgatgat 2350

2351 gaggtctctgcacaaccactacacgcagaagacgtcttccctgtctccggg 2400

S P G

2401 taaatgatagatattc - (SEQ ID NO: 27)

K * end of heavy chain

106685-23692E

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Figure 4G Light chain coding sequence in the plasmid H19CLcpn

		Eco RI	
		<u>gaattccatgga</u>	1000
1001	<u>catgaggggtccccgctcagctcctagggctcctgctgctctggctccgag</u>		1050
	M R V P A Q L L G L L L W L R		
	Leader start		
1051	gtgccagatgtgacatccagatgaccagctctccatcctcctgtgtgca		1100
	G A R C <u>D I Q</u> M T - (SEQ ID NO: 23)		
	Processed N-term		
1101	tctgtaggagacagagtcaccatcacttgcggggcaactcagagtgttag		1150
1151	taactttttaaatgggtatcagcagaagccagggggaagccctacgctcc		1200
1201	tgatctatgatgcattccacttcgcaaagtgggtcccatcaaggttcagt		1250
1251	ggcagtggtatctgggatggatttcagttctcaccatcagcagttctgcagcc		1300
1301	tgaagatcttgcaatgtattactgtcaagcagtagtatcaatacccccgttt		1350
1351	tccgcygagggaccagaatatagatatgagacgaactgtggctgcaccatct		1400
1401	gtcttcattcttcccgccatctgatgagcagttgaaatctggaactgcctc		1450
1451	tgttgtgtgctgctgaataacttctatccagagaggccaaagtacagt		1500
1501	ggaaggtggataacgcctccaatcgggtaactcccaggagagtgtcaca		1550
1551	gagcaggacagcaaggacagcacctacagcctcagcagcacccctgacgt		1600

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1501 gagcaaaagcagactacgagaaacacaaagtctacgcctgcgaagtcaccc 1650

1651 atcagggcctgagctggcccgtcacaaagagcttcaacaggggagagtgt 1700

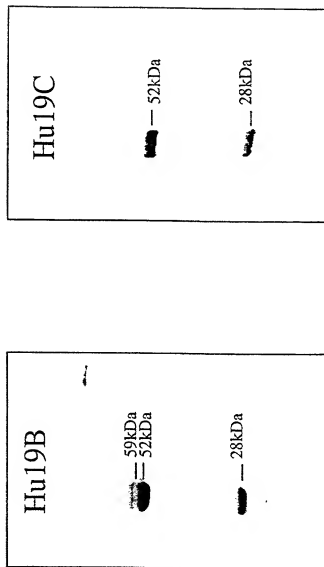
S P V T K S F T R G Q C (SEQ NO: 30)

Xba I

1701 tagtgagatgatccctctagatctacgtatgatcagcctcgactgtgcctt -(SEQ NO: 29)

* end of light chain

**Fig. 5. COOMASSIE STAINED SDS-PAGE GEL
ANALYSIS OF 10UG HU19B AND HU19C
RESPECTIVELY UNDER REDUCING CONDITIONS**



**Fig. 6. SEPARATION OF HU19B GLYCOVARIANTS
BY ANION EXCHANGE CHROMATOGRAPHY**

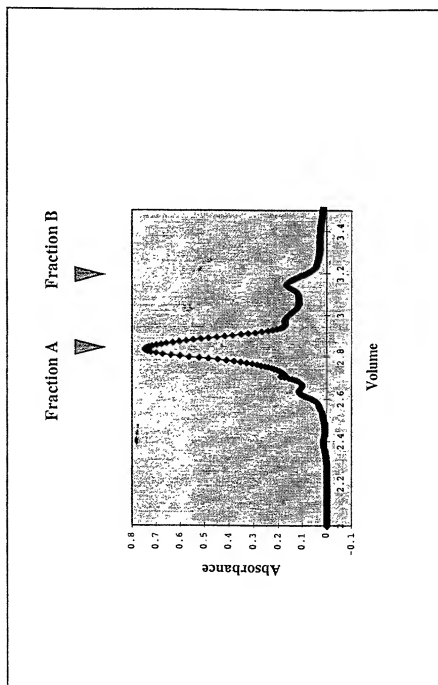
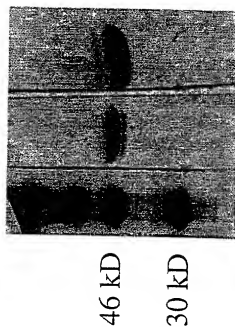


Fig.7. SDS-PAGE of
Glycosylation Variant of Hu19B

Fab



Glycovariant

Normal Fab